EXHIBIT A

2021 Target-Date Strategy Landscape

Rising markets make up for fizzling contributions and push target-date assets to an all-time high.

Morningstar Manager Research
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Executive Summary

The coronavirus pandemic presented the biggest challenge for target-date strategies since the financial crisis of 2008. Target-date strategies play a central role in many Americans' retirement success by often serving as the default investment option in their defined-contribution retirement plans. Although target-date performance rebounded sharply from the first quarter's bear market, the fallout from the economic shock continued to weigh on investor contributions throughout the year. In this report, we examine the impact of the economic uncertainty created by the pandemic on target-date contributions and how that varied between younger investors and those closest to retirement. We also look at key target-date trends, like the rise of collective investment trusts, the continued importance of fees, and how regulatory changes affect the use of sustainable and alternative strategies in target dates.

Key Takeaways

- Total assets in target-date strategies stood at approximately $2.8 trillion at the end of 2020, up from $2.3 trillion at the end of 2019.
- Assets in collective investment trusts, or CITs, crossed the $1 trillion threshold for the first time and now make up 43% of total target-date strategy assets, up from 40% a year ago and 29% five years ago.
- The COVID-19 pandemic curtailed retirement-savers' contributions. We estimate investors contributed a net $52.3 billion to target-date strategies, with CITs taking in approximately $59 billion and mutual funds experiencing net outflows of $6.7 billion. That's a drop of 59% from the $128 billion we estimate was contributed in 2019.
- Target-date categories at or near the retirement date had outflows, but flows remained positive for categories further from retirement.
- Vanguard Target Retirement, a bellwether for the target-date strategies, had net inflows into its mutual funds and CITs dropped by approximately 70% to $19 billion. Yet it still became the first target-date strategy to cross the $1 trillion mark in assets.
- The BlackRock LifePath Index series collected the most net new money among target-date series, accumulating approximately $22 billion in net contributions between its mutual funds and CITs. It's the first year since 2008 that Vanguard hasn't collected the most net new money among target-date strategies.
- The Fidelity Freedom Index series received the most net new money among target-date mutual funds, collecting a net $14.6 billion. It's the first year since 2008 that Vanguard hasn't collected the most net new money among target-date mutual funds.
- The top five asset managers manage approximately 78% of target-date assets, in line with 2019.

- Fee competition continues to be fierce among target-date providers. Although net contributions slowed considerably in 2020, the bulk of contributions to mutual funds still went to share classes in the cheapest decile.
- The average asset-weighted fee for target-date funds, which more accurately depicts the actual cost investors are paying, fell to 0.52%, down from 0.58% in 2019 and 0.73% five years ago.
- As fees among the cheapest share classes continue to narrow, Vanguard and Fidelity have lowered the minimum investment for their cheaper share classes to increase investor access, pushing the fee war in target dates into a new arena.
- Regulators in 2020 restricted sustainable investments in target dates and opened the door for more alternatives, like private equity. The sustainable investment restrictions remain vigorously debated and might not survive, however, and providers have yet to make use of the relaxed alternatives' rules.

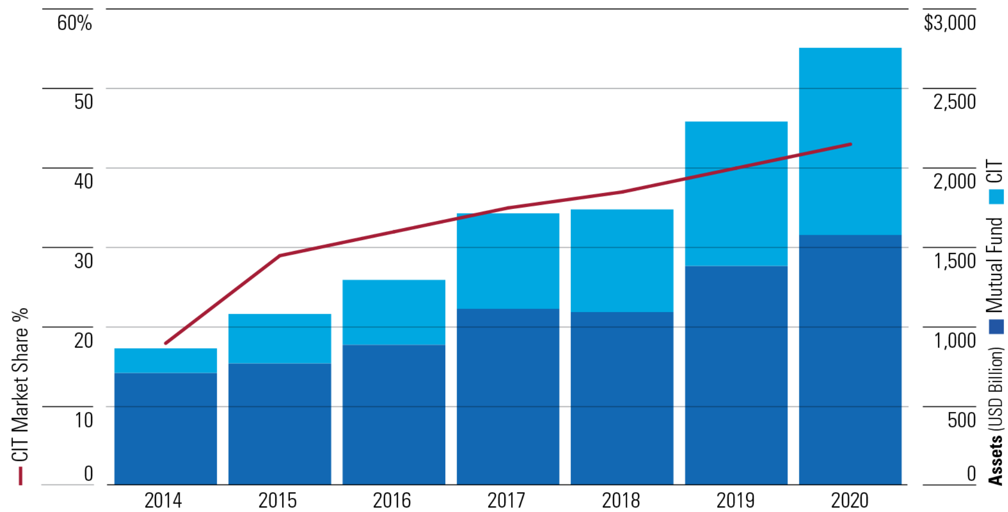
Introduction

The COVID-19 pandemic had a profound impact on every aspect of life in 2020. Retirement savings were no exception despite stock markets rallying to record highs by year-end. Assets in target-date strategies stood at a record $2.8 trillion at the end of 2020, but net contributions fell to $52 billion, down from $128 billion in 2019. Collective investment trusts, or CITs, continued to grow market share compared with their mutual fund counterparts. In fact, CITs had net inflows for the year, but target-date mutual funds experienced net outflows for the first calendar year since Morningstar began tracking the data in 2004. Vanguard Target Retirement became the first series to cross the $1 trillion threshold, but it was the first year it didn't lead the industry in net new flows since 2008.

Assets, Flows, and Competitive Landscape

Assets in target-date strategies grew by about 20% year over year, thanks primarily to market appreciation and the continued growth of CITs. CITs now hold approximately $1.2 trillion, up from about $910 billion in 2019. That's 43% of assets in target-date space, double the vehicle's share of the market five years ago. Exhibit 1 shows the growth of target-date mutual fund and collective-investment trust assets since 2014.

Exhibit 1 Total Target-Date Fund Assets



Source: Morningstar Direct, author's calculations, and surveyed data. Data as of 12/31/2020.

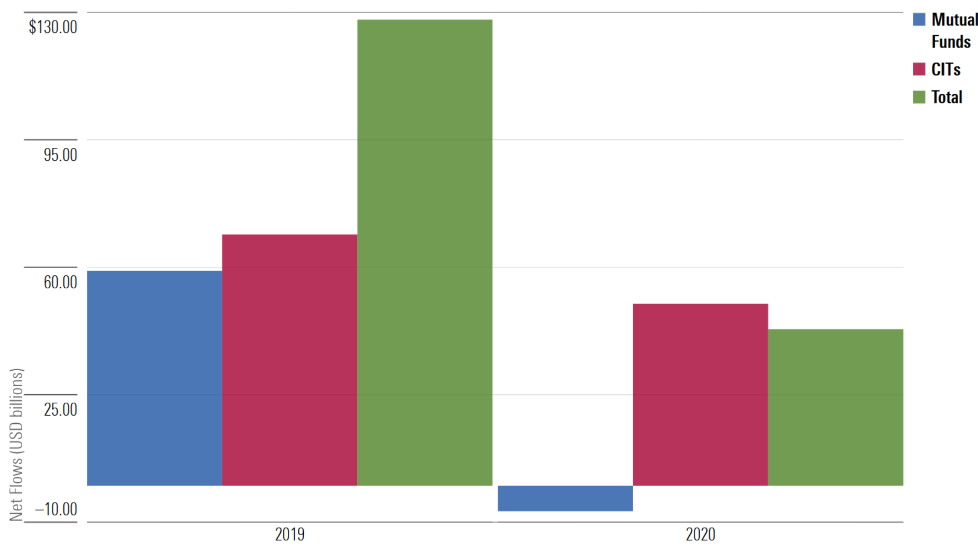
Market appreciation drove about 90% of the industry's $460 billion of growth in 2020. Despite the first quarter's bear market, target-date strategies finished the full year with strong returns. For example, at the beginning of the glide path, the Target-Date 2060+ Category average return was 15%. At the other end, the Target-Date Retirement Category average return was 9%. The other target-date category average returns fell somewhere in between.

Net inflows explain the remaining 10% of asset growth in 2020. All of that growth occurred within CITs, as target-date mutual funds experienced net outflows during the year.

CITs' main appeal versus mutual funds is they, unlike mutual funds, give larger room to negotiate fees. The Investment Company Act of 1940 requires mutual funds to charge investors the stated expense ratio in its prospectus for each share class. CITs, which are regulated by the Department of Labor and held to the fiduciary standards in the Employment Retirement Income Security Act, or ERISA, do not have this same requirement. That allows the largest defined contribution plans to use their size to push for extra cost savings for participants.

CITs continue to pull in more net contributions than mutual funds, even though both experienced a steep drop in contributions in 2020. Exhibit 2 shows the year-over-year change in net inflows into target-date mutual funds, CITs, and overall.

Exhibit 2 Year-Over-Year Change in Target-Date Net Flows



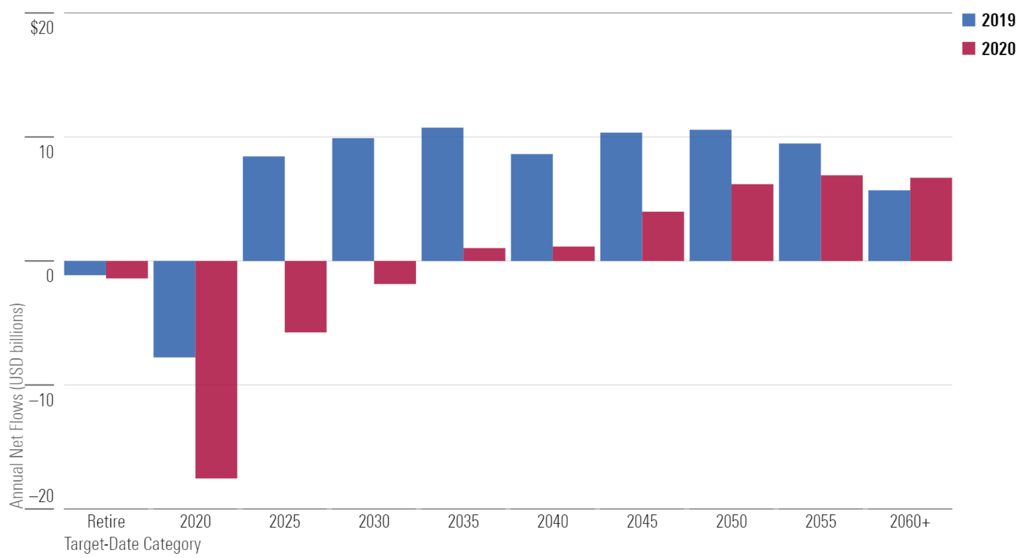
Source: Morningstar Direct, and surveyed data. Data as of 12/31/2020.

Total net inflows to target-date strategies fell by about 59% in 2020 as the economic stress of the COVID-19 pandemic weighed on investors. Target-date mutual funds finished with a net $6.7 billion of outflows, but $10 billion of that came in December when the Kaiser Permanente Retirement Path series liquidated. Excluding this series, flows were positive, though still a paltry $2.7 billion compared with 2019's $60 billion haul. Inflows into CITs were down too, but not as much. CITs collected an estimated $59 billion in 2020, down from $69 billion.

The slowdown in net inflows, despite the strong returns, reflect 2020's disconnect between the economy and the stock market. For the full year, the U.S. GDP contracted by an estimated 4.3%, the largest shrinkage since 1946, yet the S&P 500 still rallied 18% for the year and ended at all-time highs. The recession led to real-world struggles for investors. Almost 4% of employers have suspended matching 401(k) contributions since March and 37% of plans report an increase in hardship withdrawals since then, according to a Plan Sponsor Council of America survey published in November 2020. Half of participants who reported taking advantage of the relaxed rules on distributions said they did so to pay for regular expenses, according to a survey of plan sponsors by T. Rowe Price. The uptick in withdrawals was expected once the Coronavirus Aid, Relief and Economic Security Act (or CARES Act) passed in March. It waived the 10% early withdrawal penalty fee on hardship withdrawals up to $100,000 and allowed investors to spread out the taxes owed on the distributions over three years to reduce their 2020 tax burden.

Mutual fund target-date flows, shown in Exhibit 3 below, were inversely proportional to their proximity to retirement dates—the further away, the stronger the flows. CIT flow data isn't consistent enough to make the same graph, but anecdotal evidence indicates CIT flows followed the same pattern.

Exhibit 3 Target-Date Category Net Flows



Source: Morningstar Direct. Data as of 12/31/2020.

The Target-Date 2020 Category experienced the largest withdrawal uptick as that vintage hit its retirement date. The net outflows from the 2025 and 2030 Categories, which still have five to 10 years of time horizon left, were more surprising. In 2015, the last time a lot of target-date funds hit their retirement years, (they tend to be quintennial) vintages five and 10 years from their goals did not see outflows. That could imply more investors tapped their retirement accounts due to pandemic-triggered economic hardship.

It's encouraging to see younger investors, who have the longest time horizons, continue to make steady contributions, even though they were still lower than in 2019. For retirement savers, time is the greatest asset when it comes to rebounding from bear markets like the one in 2020's first quarter.

Vanguard Dethroned for the First Time Since 2008

A new winner among target-date series emerged in the annual race for most net inflows. BlackRock LifePath Index collected almost $22 billion in its mutual funds and CITs in 2020, according to our estimates, edging past Fidelity Freedom Index and Vanguard Target Retirement. Vanguard had won every year since 2008 when it knocked off Fidelity Freedom, the active-based sibling of Freedom Index. Exhibit 4 shows the top five series ranked by total net inflows into mutual funds and CITs.

Exhibit 4 Top 5 Series by Net Inflows (Mutual Funds and CITs)

	Net Inflows (USD Billions)		
Series Name	Mutual Funds	CITs	**Total**
BlackRock LifePath Index	5.2	16.6	**21.8**
Fidelity Freedom Index	15.6	4.2	**19.8**
Vanguard Target Retirement	2.7	16.8	**19.5**
American Funds Target Date Retirement	13.5	2.5	**16.0**
JPMorgan SmartRetirement Blend	4.4	9.6	**13.9**

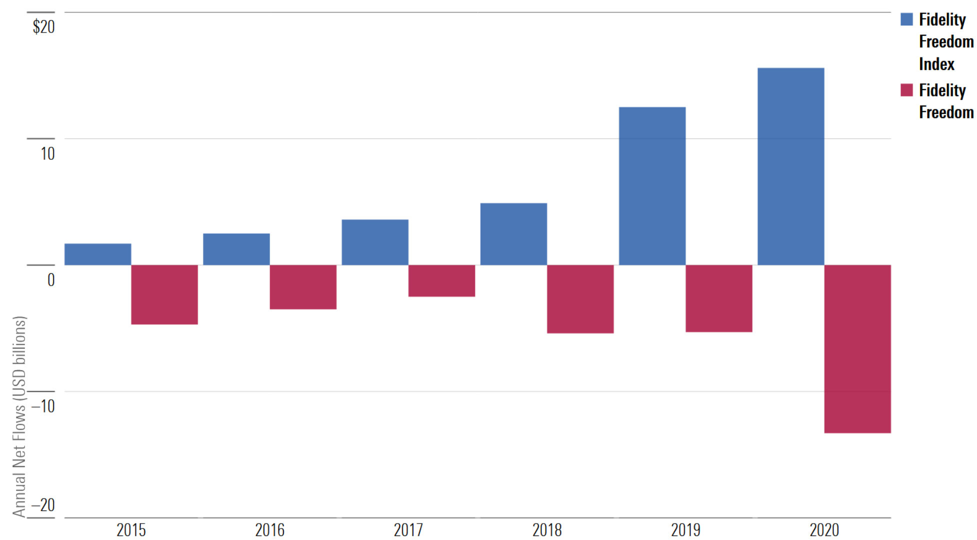
Source: Morningstar Direct, author's calculations, surveyed data. Data as of 12/31/2020.

BlackRock LifePath Index continues to gather more assets in its CITs than mutual funds, which reflects its deeper connections with larger institutional plans. We estimate the flows into the firms' CITs, which includes both the share lending and non-share lending versions of the series, declined by about $10 billion year-over-year. Still the $16.6 billion it collected, second to only Vanguard, was enough to earn it the top spot for the year.

Fidelity Freedom Index is the only series among the top five to see a significant jump in 2020 mutual fund flows, though estimated CIT flows were slightly down from $7 billion in 2019. Vanguard saw the biggest flow drop in both vehicles, with mutual funds down from $29 billion and CIT flows down from an estimated $41 billion. Its overall flows were down roughly 70%.

Fidelity Freedom Index appeared to at least partially source its flows from its active-based sibling Fidelity Freedom, likely owing to increased fee pressure. Investors are increasingly fee-conscious. Lawyers representing swathes of them filed nearly 100 excessive fee lawsuits against 401(k) plans in 2020, up from 19 in 2019, reported mutual fund industry news site Ignites. So, a move from more expensive options to cheaper ones makes sense.

Exhibit 5 Fidelity Freedom and Fidelity Index Net Flows



Source: Morningstar Direct. Data as of 12/31/2020.

In total, Freedom Index has collected approximately $40 billion over the last five years in its mutual funds, while Freedom has shed roughly $35 billion. We don't have enough information to say for sure how much of the inflows are coming from the more expensive sibling. That being said, Fidelity is the largest recordkeeper and it's not uncommon for recordkeeping platforms to offer plan sponsor incentives to choose an in-house option.

Since Freedom Index launched in 2009, it has underperformed the active-based Freedom, so poor performance isn't driving the outflows. That leaves fees as the likely culprit. For more on the performance of these two series and other sibling rivalries, see Exhibit 19.

Despite the slowdown in flows, Vanguard still became the first series to surpass $1 trillion in assets, as shown in Exhibit 6. That's more than double the total target-date assets at Fidelity, the next largest target-date provider. Vanguard's size reflects how vast its reach is across retirement plans. As the first series to loudly emphasize low costs as a key advantage, it has always held appeal for both small- and large-sized plans.

Exhibit 6 shows the top 10 firms ranked by target-date market share.

Exhibit 6 10 Largest Target-Date Providers

		Assets (USD in Billions)			Market Share
Firm	Target-Date Fund Series	Mutual Fund	CIT	Total TDF	2020
Vanguard				**1,007**	**36.7%**
	Vanguard Target Retirement	589	418		
Fidelity				**365**	**13.3%**
	Fidelity Freedom	212	—		
	Fidelity Freedom Index	70	23		
	Fidelity Freedom Blend	7	33		
	Fidelity Advisor Freedom	20	—		
T. Rowe Price				**318**	**11.6%**
	T. Rowe Price Retirement	171	123		
	T. Rowe Price Target	3	1		
	T. Rowe Price Retirement Hybrid	—	15		
	T. Rowe Price Retirement Blend	—	5		
BlackRock				**262**	**9.5%**
	BlackRock LifePath Index	50	208		
	BlackRock LifePath Index Conservative	—	3		
	BlackRock LifePath Dynamic	1	—		
	BlackRock LifePath ESG Index	<1	—		
American Funds				**198**	**7.2%**
	American Funds Target Date Retirement	192	6		
J.P. Morgan				**105**	**3.8%**
	JPMorgan SmartRetirement	42	5		
	JPMorgan SmartRetirement Blend	14	27		
	JPMorgan SmartRetirement (Direct Real Estate)	—	15		
	JPMorgan SmartRetirement Blend (DRE)	—	2		
State Street				**89**	**3.2%**
	State Street Target Retirement	9	80		
Nuveen				**75**	**2.7%**
	TIAA-CREF Lifecycle	39	—		
	TIAA-CREF Lifecycle Index	35	<1		
	Nuveen TIAA Lifecycle Blend	—	<1		
Principal				**74**	**2.7%**
	Principal LifeTime Hybrid	2	48		
	Principal LifeTime	24	—		
Schwab				**27**	**1.0%**
	Schwab Target	5	13		
	Schwab Target Index	3	6		

Source: Morningstar Direct, author's calculations, surveyed data. Data as of 12/31/2020.

The target-date industry remains top-heavy. The five largest firms' market share was approximately 78%, unchanged from 2019. There was no change among the top five, but according to our estimates Schwab replaced American Century as the 10th largest provider.

Similar to Fidelity Freedom, T. Rowe Price's flagship strategy faces challenges due to fee pressure. Both were early winners among target-date funds and have long been among the three largest providers. But with investors' laser focus on fees, the series has faced headwinds in recent years. Although T. Rowe Price has seen steady outflows from its mutual funds, it has benefitted from clients switching to the cheaper CIT version. T. Rowe and Fidelity have launched versions of their series that combine active and passive options, typically referred to as "blend" series. These series are usually cheaper than all-active-based series.

Target-Date Series Ratings

The table below shows ratings assigned to the cheapest share class of target-date mutual fund series we cover, as of March 2021, along with the average expense ratio across its vintages. It also highlights how the Morningstar Analyst Rating, People Pillar, Process Pillar, and Parent Pillar changed between March 2020 and March 2021. Overall, three series' cheapest share class received an upgrade to its Morningstar Analyst Rating, while one received a downgrade.

Exhibit 7 Morningstar Analyst Ratings for Target-Date Strategies

Strategy Name	Prospectus Adjusted Expense Ratio %	Morningstar Analyst Rating	Pillar Rating ↑Upgrades ↓Downgrades: People	Process	Parent
BlackRock LifePath Index	0.09	Gold	High	Above Average	Above Average
PIMCO RealPath Blend	0.17	Gold	High	Above Average	Above Average
JPMorgan SmartRetirement Blend	0.19	Gold	Above Average	High	Above Average
T. Rowe Price Retirement	0.52	Gold ↑	High	High ↑	High
MassMutual Select TRP Retirement	0.51	Gold ↑	High	High ↑	Average
Fidelity Freedom Index	0.08	Silver	Above Average	Above Average	Above Average
State Street Target Retirement	0.09	Silver	Above Average	Above Average	Average
Vanguard Target Retirement	0.09	Silver	Above Average	Above Average	High
American Funds Target Date	0.39	Silver	High	Above Average	High
BlackRock LifePath Dynamic	0.40	Silver ↑	High ↑	Above Average	Above Average
JPMorgan SmartRetirement	0.46	Silver	Above Average	High	Above Average
Fidelity Freedom	0.50	Silver	High	Above Average	Above Average
TIAA-CREF Lifecycle Index	0.10	Bronze	Average	Above Average	Average
Fidelity Advisor Freedom	0.50	Bronze	Above Average	Above Average	Above Average
Dimensional Target Date Retirement Income	0.25	Neutral	Average	Average	High
John Hancock Multi-Index Lifetime	0.32	Neutral	Average	Average	Above Average
John Hancock Multi-Index Preservation	0.39	Neutral	Average	Below Average	Above Average
Principal Lifetime Hybrid	0.39	Neutral	Average	Average	Average
TIAA-CREF Lifecycle	0.45	Neutral ↓	Average	Above Average	Average
MFS Lifetime	0.46	Neutral	Above Average	Average	Above Average
American Century One Choice	0.54	Neutral	Average	Average	Average
Natixis Sustainable Future	0.60	Neutral	Below Average	Average	Average
John Hancock Multimanager Lifetime	0.61	Neutral	Above Average	Average	Above Average
MassMutual RetireSMART by JPM	0.65	Neutral	Above Average	Average	Average
Principal LifeTime	0.68	Neutral	Average	Average	Average
Schwab Target	0.71	Neutral	Average	Average	Above Average
Voya Solution	0.80	Neutral	Average	Average	Average

Source: Morningstar Direct. Data as of 2/25/2020.

T. Rowe Price Retirement and MassMutual Select T. Rowe Price Retirement were upgraded to Gold as a result of increased confidence in a compelling process with a record of deft execution (both series are overseen by the same team and feature the same glide path, asset allocation, and underlying

managers). In 2020, management announced its intention to increase the amount of equity throughout the glide path over the next two years to better combat the risk of investors outliving their assets in retirement. As a result, it will have the most equity-heavy glide path throughout the accumulation phase and at retirement relative to any other target-date fund on this coverage list. This will lead to more volatile returns versus peers, particularly in periods like the first quarter of 2020. But for investors who are willing to endure a potentially bumpy ride, we believe there is considerable upside to owning this series over the long-term thanks to its combination of forward-thinking managers and skilled underlying managers.

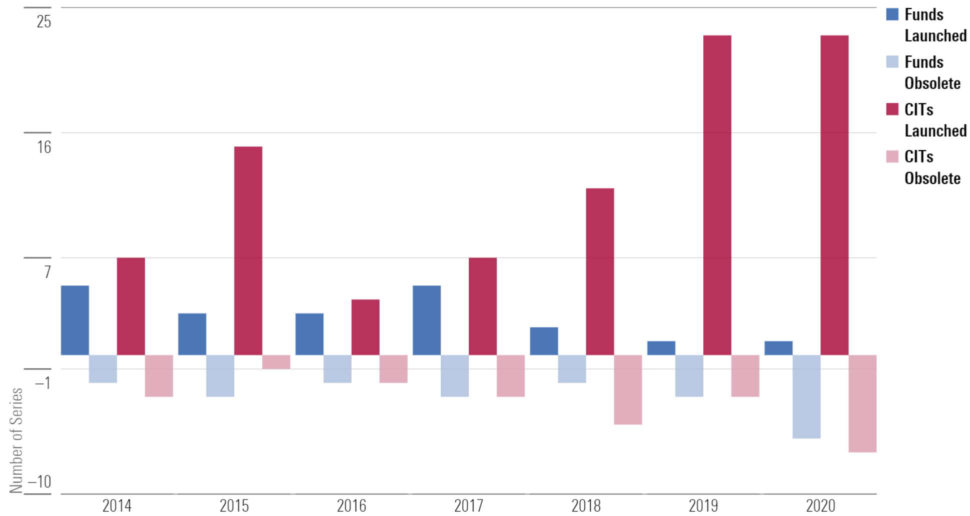
Buoyed by increased confidence in its robustly staffed and collaborative team, BlackRock LifePath Dynamic received an upgrade to Silver. BlackRock's global tactical asset-allocation team, led by Phil Green, handles the underlying strategy selection and tactical moves away from the strategic allocation. Green has the full suite of active and passive strategies at BlackRock to choose from, which gives him one of the widest tool kits of any proprietary target-date fund series, a clear positive for the series' long-term prospects. This series is underpinned by one of the most forward-thinking glide path and asset-allocation teams in target-date funds; its glide path and strategic asset allocation are the same as BlackRock LifePath Index, which also receives a High rating for People.

TIAA-CREF Lifecycle was the only series that saw its cheapest share class downgraded over the past year. Our enhanced ratings methodology places a greater emphasis on fees, and subsequently, this series lacks the lower performance hurdle of more competitively priced alternatives, resulting in a Morningstar Analyst Rating of Neutral.

Target-Date Mutual Fund Options Continue to Shrink as CITs Drive Product Development

For the second straight year firms liquidated or merged more target-date mutual fund series than they launched. The number of CIT series reported to Morningstar continued to spike though. Exhibit 8 shows the launches and closings of mutual fund and CIT target-date series since 2014.

Exhibit 8 Target-Date Launches/Terminations, Count 2014-20



Source: Morningstar Direct. Data as of 12/31/2020.

BlackRock LifePath ESG Index was the only new target-date mutual fund series in 2020, while six were liquidated. Emblematic of the shift to CITs, Manning & Napier merged away its target-date mutual fund series in 2020 but kept the CIT version.

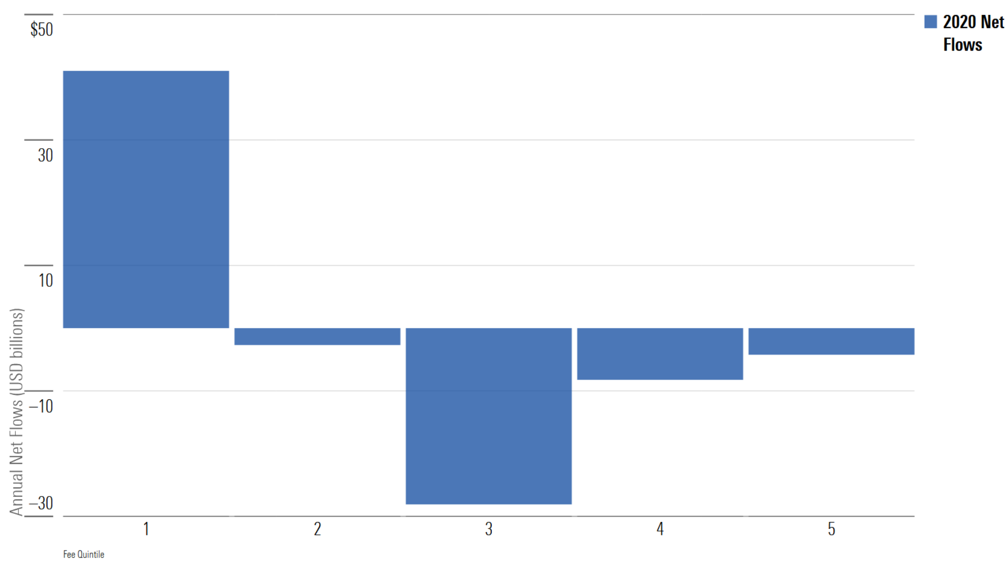
Some CIT launches in 2020, like Nuveen TIAA Lifecycle Index or Pimco RealPath Blend, were clones of existing mutual fund series, but most were new, like John Hancock Lifetime Blend. Another reason there were more CIT launches is they tend to come in more flavors than mutual fund series do. CIT series often have more aggressive or conservative glide path versions, which is rare in mutual funds.

CITs will only become more important for target-date providers. Current law prevents 403(b) plans—essentially 401(k) plans for nonprofit organizations and public schools—from including CITs in their lineups. However, this could change, as two bipartisan bills introduced in 2020 include provisions that would lift this restriction. While both proposals could be used as additional participant safeguards, the legislation would provide workers in 403(b) plans access to the same options as workers in other plans. If it becomes law, CIT target-date funds, which are often cheaper than the mutual funds most 403(b) plans offer now, could take more market share.

Fee War Continues and Evolves

Investors continued a near decadelong trend of preferring the least expensive target-date share classes in 2020. Exhibit 9 shows the net flows for 2020 by fee quintile for all share classes. The first quintile is the cheapest.

Exhibit 9 2020 Net Flows by Fee Quintile

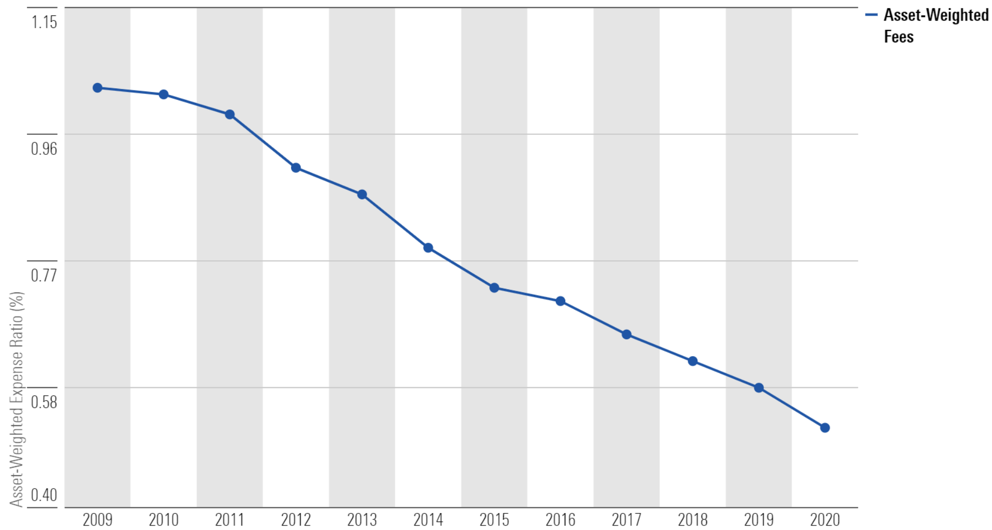


Source: Morningstar Direct. Data as of 12/31/2020.

Flows follow low fees. It's that simple. Not only did investors prefer target-date share classes in the cheapest quintile, but 70% of the net inflows into the cheapest share class went to the cheapest decile. An abundance of research shows cheaper funds tend to outperform more expensive ones.

The migration to the cheapest share classes continues to reduce the actual target-date mutual fund fees investors actually pay. The asset-weighted average target-date mutual fund expense ratio, which gives a better view of what the typical investor is really paying, dropped 7 basis points to 0.52% in 2020, and is now almost half of what it was in 2009. Exhibit 10 illustrates the decline since 2009.

Exhibit 10 Target-Date Funds' Average Asset-Weighted Expense Ratio, 2009-20



Source: Morningstar Direct. Data as of 12/31/2020.

In 2020, the asset-weighted fee fell at 28 of the 47 mutual fund series that were incepted prior to 2020. Most declined because cheaper share classes received more flows than expensive ones. Exhibit 11 outlines the year-over-year change in asset-weighted fees for each series.

Exhibit 11 Target-Date Series' Weighted Average Expense Ratios

	Weighted Average Expense Ratio %		
Name	2020	2019	Percentage Change 2019 to 2020
JPMorgan SmartRetirement Blend	0.21	0.31	-32
USAA Target Retirement	0.60	0.77	-22
Putnam RetirementReady	0.74	0.93	-21
BlackRock LifePath Index	0.14	0.17	-15
Voya Index Solution	0.31	0.35	-12
Wells Fargo Target	0.37	0.41	-10
BlackRock LifePath Dynamic	0.71	0.79	-10
MFS Lifetime	0.71	0.78	-9
Fidelity Freedom Index	0.09	0.10	-8
T. Rowe Price Target Retire	0.58	0.62	-7
Great-West Lifetime	0.88	0.94	-7
Voya Solution	0.99	1.05	-6
MassMutual Select TRP Retirement	0.68	0.71	-5
JPMorgan SmartRetirement	0.61	0.64	-5
T. Rowe Price Retirement	0.64	0.67	-5
Pimco RealPath Blend	0.31	0.32	-4
Voya Target Retirement	0.54	0.56	-4
Goldman Sachs Target Date Portfolio	0.29	0.30	-4
Principal LifeTime	0.75	0.78	-3
TIAA-CREF Lifecycle Index	0.14	0.14	-3
Prudential Day One	0.46	0.48	-3
Schwab Target	0.56	0.58	-3
Vanguard Target Retirement	0.12	0.12	-3
Franklin LifeSmart	0.74	0.76	-3
Great-West SecureFoundation Lifetime	0.65	0.66	-2
Guidestone Funds MyDestination	0.67	0.68	-2
American Funds Target Date Retirement	0.56	0.57	-2
Dimensional Target Date Retirement Income	0.23	0.23	-2
Principal Lifetime Hybrid	0.44	0.45	-1
Nationwide Target Destination	0.74	0.74	0
Fidelity Advisor Freedom	0.87	0.87	0
John Hancock Multi-Index Preservation	0.41	0.41	0
Natixis Sustainable Future	0.58	0.58	0
TIAA-CREF Lifecycle	0.49	0.49	0
John Hancock Multi-Index Lifetime	0.41	0.41	0
MassMutual RetireSMART by JPMorgan	0.90	0.90	0
American Century One Choice	0.79	0.79	0
Fidelity Freedom	0.61	0.61	0
Schwab Target Index	0.08	0.08	0
Transamerica ClearTrack	1.19	1.19	0

Source: Morningstar Direct. Data as of 12/31/2020.

Exhibit 11 Target-Date Series' Weighted Average Expense Ratios (Continued)

Name	Weighted Average Expense Ratio % 2020	2019	Percentage Change 2019 to 2020
1290 Retirement	0.65	0.65	0
Columbia Adaptive Retirement	0.60	0.60	0
John Hancock Multimanager Lifetime	0.69	0.69	0
Fidelity Freedom Blend	0.34	0.34	1
Wells Fargo Dynamic Target	0.32	0.31	3
Harbor Target Retirement	0.76	0.72	5
State Street Target Retirement	0.10	0.09	9
BlackRock LifePath ESG Index	0.22	—	—
Putnam Retirement Advantage	0.46	—	—

Source: Morningstar Direct. Data as of 12/31/2020.

Both Putnam RetirementReady and JPMorgan SmartRetirement Blend experienced notable asset-weighted average fee reductions over the past year due to investors piling into the cheapest share class of each series. Its cheapest share class holds over 75% of the series' assets and continues to attract new flows while more expensive share classes either experienced outflows or no flows.

The asset-weighted average expense ratio for JPMorgan SmartRetirement Blend fell as the series cheapest R6 share class captured 94% of net assets, up from 81% in 2019.

USAA Target Retirement's asset-weighted average expense ratio declined due to cuts. It lowered fees on all vintages. The 2060 vintage's expense ratio, for instance, dropped from 0.88% to 0.67%, and the Income vintage dropped from 0.65% to 0.56%.

Schwab Target Date Index Series remained the cheapest series. Fidelity Freedom Index was the only other one with an asset-weighted fee ratio below 0.10%.

Vanguard and Fidelity Move From Slashing Fees to Slashing Minimums

What do you do to make your already extremely low-cost index-based target-date series even cheaper to invest in? For Vanguard and Fidelity, the answer is making it easier for plans to access your cheapest share class.

Both Vanguard and Fidelity slashed the minimum investments on their cheapest share classes. Vanguard moved first in December 2020, lowering the threshold to access its institutional share classes to $5 million, 95% lower than its previous $100 million threshold. Vanguard's institutional shares charge an average of 0.09%, 5 basis points lower than its investor share class. In January 2021, Fidelity followed suit by slashing the minimum investment on its cheapest share class to $5 million from $100 million. Fidelity's cheapest share class charges 0.08%, 1 basis point less than Vanguard's.

Do Fees Still Matter for Performance?

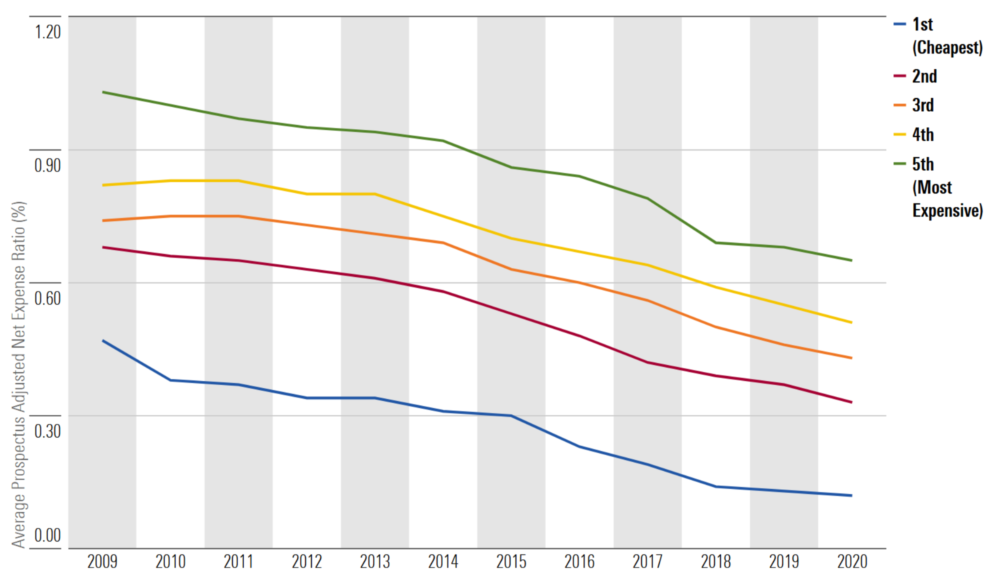
As this trend drives overall fees lower, and differences narrow, are fees still as predictive of outperformance as they have been in the past?

To measure the importance of fees on target-date fund returns, we looked at the rolling five-year net-of-fee returns for every 2025 and 2045 target-date fund that existed between January 2009 and December 2020, including dead funds, using its cheapest share class throughout the period. We also looked at how cheap each fund's cheapest share class has become over that period. The cheapest share class was chosen so each target-date fund's net-of-fee performance could be compared on equal footing. We chose the 2025 and 2045 vintages to examine any differences between funds nearer the retirement date, which tend to be more bond-heavy, and further out on the glide path, where equities play a larger role.

Cheap Keeps Getting Cheaper

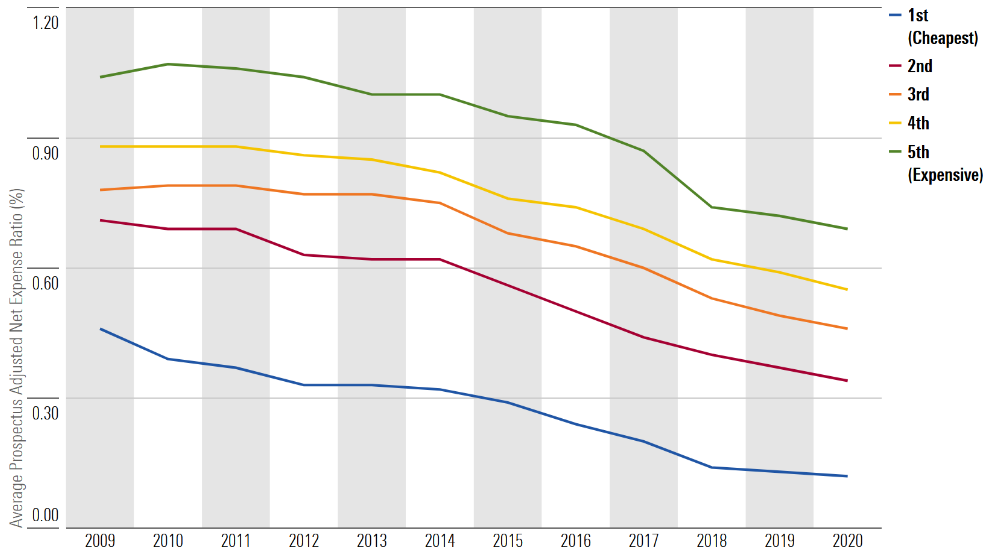
The average fees of the cheapest share classes of 2025 and 2045 target-date funds have declined significantly since 2009. The two exhibits below show the average prospectus-adjusted net expense ratio by fee quintile.

Exhibit 12 Average Prospectus Adjusted Net Expense Ratio by Fee Quintile for 2025 Funds' Cheapest Share Class



Source: Morningstar Direct, author's calculations. Data as of 12/31/2020.

Exhibit 13 Average Prospectus Adjusted Net Expense Ratio by Fee Quintile for 2045 Funds' Cheapest Share Class

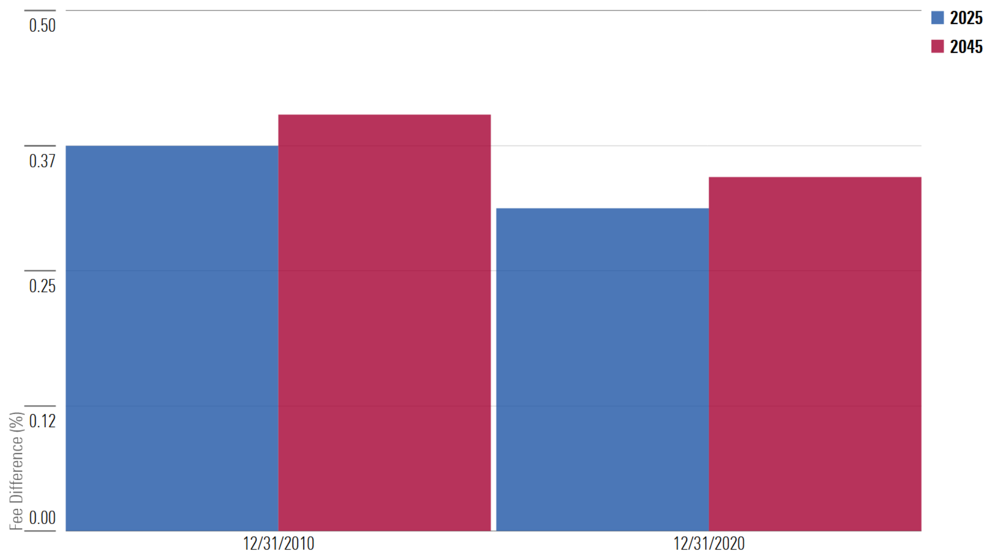


Source: Morningstar Direct. Data as of 12/31/2020.

The average fee in the cheapest quintile has declined to 0.12% for both 2025 and 2045 funds, down from 0.47% and 0.46%, respectively, a decade ago. That's a decline of about 70%, the most significant of all quintiles over that period. The average fee in the third quintile, for example, has declined to 0.43% from 0.74% for both vintages, a 42% drop.

Although the average fee in the cheapest quintile has declined the fastest over the period, it makes fee reductions increasingly harder as expenses near zero. As a result, the absolute fee gap between the cheapest and middle quintiles has contracted in recent years. This narrowing effect can be seen by the smaller margins separating the cheapest and middle quintiles, as shown in Exhibit 14.

Exhibit 14 Average Fee Difference Between First and Third Quintiles



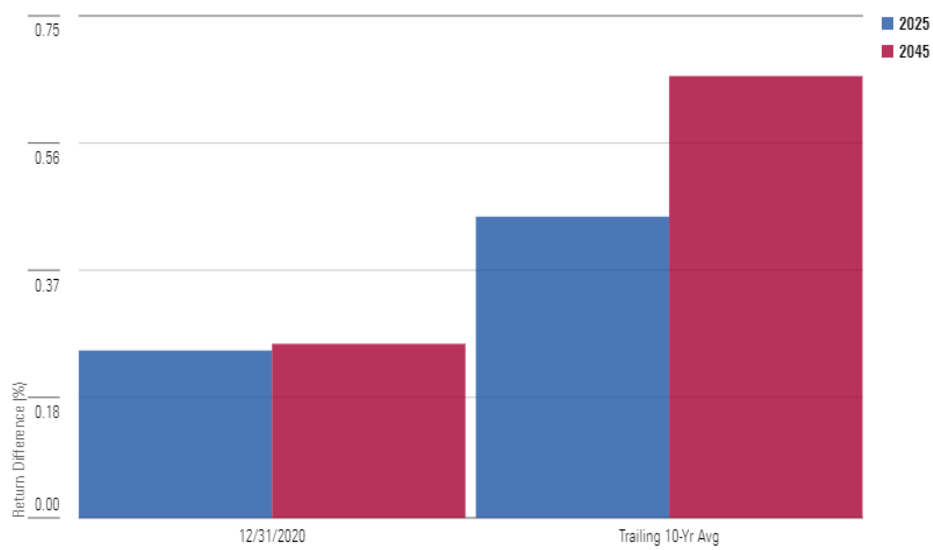
Source: Morningstar Direct. Data as of 12/31/2020.

The fee advantage the cheapest options have versus those in the middle of the pack is 6 basis points smaller than it was a decade ago. While that's not particularly meaningful, the return difference between these two fee quintiles has declined dramatically, suggesting target-date strategies are behaving similarly.

Exhibit 15 shows that the difference between the top- and third-quintile's average five-year return through December 2020 was about 25 basis points for both vintages. Over the last 10 years, the average return difference between the top and third quintiles was about 45 basis points for 2025 vintages and about 65 basis points for 2065 vintages.

As target-date strategies have grown in popularity, assets have poured in, spurring firms to shore up their portfolio-construction capabilities. Managers have largely improved their approaches to asset allocation, manager selection, and risk management. As a result, the industry has become somewhat more homogenous.

Exhibit 15 Average Return Difference Between Top and Third Quintiles



Source: Morningstar Direct. Data as of 12/31/2020.

With fee differences falling narrowly and return differences falling significantly, fees have arguably become even more important predictors of performance.

Exhibit 16 shows that through Dec. 31, 2020, fees more than accounted for the difference between the trailing five-year returns of the average 2025 and 2045 category funds in the first and third fee quintiles.

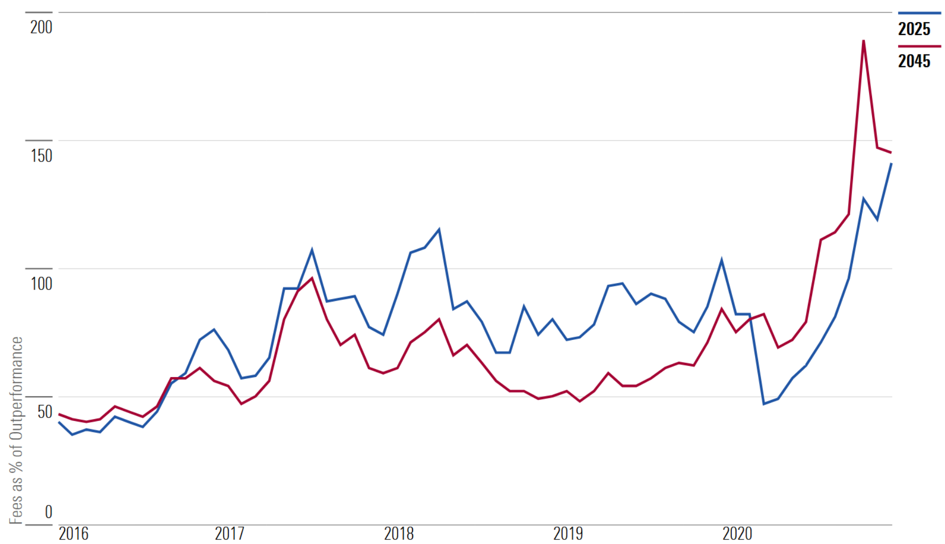
Exhibit 16 Fees Make a Big Impact on Relative Returns

Year	Quintile	Average Return %	Average Fee %	Fee as Percentage of Outperformance
2025	1st	9.57	0.16	141
	3rd	9.33	0.51	
2045	1st	11.87	0.17	145
	3rd	11.61	0.55	

Source: Morningstar Direct, author's calculations. Data as of 12/31/2020.

The relationship between fees and performance differences between these two groups has grown stronger over time, as shown in Exhibit 17.

Exhibit 17 Fees as a % of Relative Performance Over the Last Decade



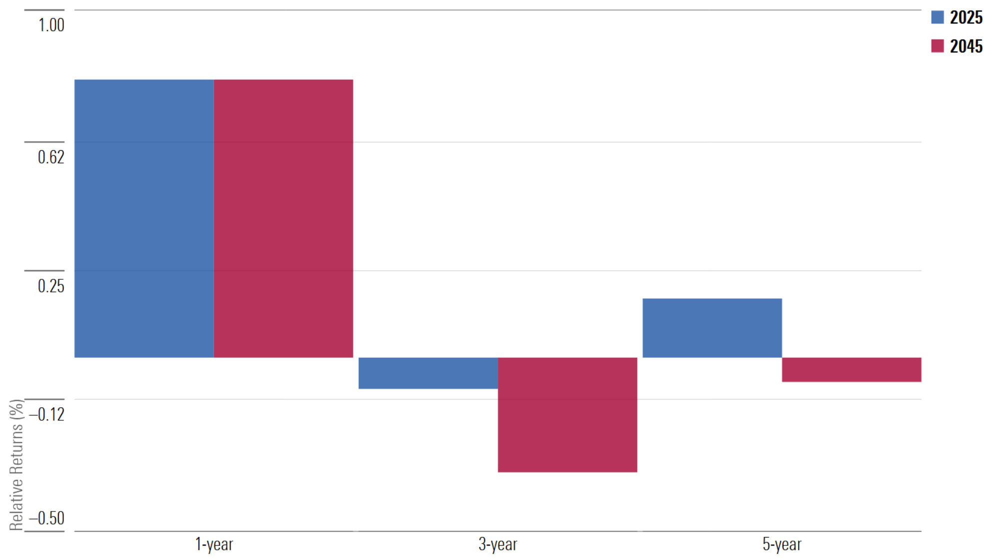
Source: Morningstar Direct, author's calculations. Data as of 12/31/2020.

This trend suggests it's prudent for investors to give fees a heavy weight when evaluating target-date options.

A Closer Look at Firms' Lower- and Higher-Cost Options

As investor demand for cheaper target-date options has surged over the past decade, some prominent firms that originally only offered target-date series that primarily invested in actively managed funds have been busy launching cheaper options. Typically, that means following the same glide path, but swapping out underlying active funds for passive funds. To evaluate how these new series have fared versus their in-house siblings, we looked at firms that offer both an active-based series and an index-based series and compared returns since the common inception date and over more recent time periods. In general, these series from five firms are much more competitive with each other than the fee differences would suggest. Exhibit 18 shows the median relative performance of each firm's active-based series minus its index-based series over the trailing one-, three-, and five-year periods. A positive result indicates the active-based series outperformed the index-based series and vice versa. We used the 2025 and 2045 vintages to highlight opposite ends of the glide path.

Exhibit 18 Median Performance of In-House Active-Based vs. Index-Based



Source: Morningstar Direct. Data as of 12/31/2020.

Elder siblings that use actively managed underlying funds performed better than their cheaper counterparts on both ends of the glide path during the 2020's roller-coaster market. The advantage of low fees are not always apparent over such short periods, since the drag of higher fees compounds over time.

Active-based 2025 funds, which tend to be close to half equities and half bonds, fared better than the 2045 funds, which own mostly equities, over the five-year period. Actively managed bond funds tend to survive and outperform their indexes and peers at higher rates than actively managed stock funds; active large-cap funds that dominate most equity-heavy target-date portfolios have had a particularly difficult time. More can be found on actively managed success rates in Exhibit 21 and Morningstar's Active/Passive Barometer.

Exhibit 19 shows each series' results and includes 10-year returns when available.

Exhibit 19 Series Level Returns for Active and Index-Based Series

Year	Inception Date	Expense Ratio %	Return % 1 Year	3 Year	5 Year	10 Year	Since Common Inception
BlackRock							
BlackRock LifePath Dynamic 2025	6/30/10	0.40	13.17	8.99	9.91	7.72	7.34
BlackRock LifePath Index 2025	5/31/11	0.09	12.42	8.39	9.27		7.49
BlackRock LifePath Dynamic 2045	6/30/08	0.40	14.54	10.11	12.14	9.51	9.02
BlackRock LifePath Index 2045	5/31/11	0.09	14.64	10.21	11.91		9.33
Fidelity							
Fidelity Freedom 2025	11/6/03	0.65	14.65	8.83	10.11	8.16	9.12
Fidelity Freedom Index 2025	10/2/09	0.12	13.55	9.08	9.94	7.89	8.75
Fidelity Freedom 2045	6/1/06	0.75	18.15	10.51	12.36	9.63	10.64
Fidelity Freedom Index 2045	10/2/09	0.12	16.42	10.84	12.43	9.47	10.40
John Hancock							
JHancock Multimanager 2025 Lifetime	9/1/11	0.57	15.76	9.14	10.39	8.52	8.10
JHancock Multi-Index 2025 Lifetime	11/7/13	0.39	13.00	8.58	10.05		7.93
JHancock Multimanager 2045 Lifetime	3/1/12	0.59	20.45	11.08	12.63	9.91	9.72
JHancock Multi-Index 2045 Lifetime	11/7/13	0.36	16.23	10.03	12.09		9.40
TIAA-CREF							
TIAA-CREF Lifecycle 2025	1/17/07	0.66	13.23	8.12	9.57	8.37	10.94
TIAA-CREF Lifecycle Index 2025	9/30/09	0.35	13.69	8.94	9.75	8.46	11.09
TIAA-CREF Lifecycle 2045	11/30/07	0.45	17.31	10.11	12.26	10.33	9.00
TIAA-CREF Lifecycle Index 2045	9/30/09	0.10	17.02	11.08	12.67	10.65	8.94
Voya							
Voya Solution 2025 Port	4/29/05	0.74	13.85	8.39	9.34	7.87	6.25
Voya Index Solution 2025 Port	3/10/08	0.39	13.05	8.48	9.45	7.99	6.37
Voya Solution 2045 Port	10/3/11	0.80	16.57	9.22	11.04	9.28	7.14
Voya Index Solution 2045 Port	10/3/11	0.39	15.78	9.92	11.62	9.67	7.39

Source: Morningstar Direct. Data as of 12/31/2020.

For the most part, the returns since the common inceptions are tight across the six firms we focused on. Net of fees, no series outperformed its sibling by more than 0.50% annualized for either the 2025 or 2045 vintages over their common track record through the end of 2020.

Fidelity Freedom and Freedom Index have the longest common track record, dating back to late 2009. Both series performed within 0.40% annualized of each other, with the active series coming out on top for both vintages. Of course, 0.40% compounded over the same period is meaningful; for a starting investment of $100,000 it would equal almost $10,000 in extra gains. Still, results vary depending on the start date. Over the trailing three-year period, Freedom Index comes out on top for both vintages despite the active version’s superior showing in 2020. And results are mixed over five years, with Freedom Index 2045 and Freedom 2025 coming out on top.

John Hancock Multi-Manager is the only series to top its index-based sibling across all the time periods we looked at for both 2025 and 2045 funds. The Multi-Manager series had a stellar 2020. In the second quarter, its actively managed mid-cap fund outperformed the mid-cap index fund in its sibling by about 17 percentage points and its active emerging-markets stock fund beat its index proxy by 9 percentage

points. In the fourth quarter, the emerging-markets fund again sailed past the index fund in the sibling, and the inclusion of an active small-cap value fund was also additive as that asset class had a strong rally to end the year.

Overall, there doesn't seem to be a clear-cut winner when choosing between a firm's active-based and index-based series (as long as the glide path and asset allocation are consistent for both options). When it comes to cheap options versus more expensive options, however, the burden of proof lies on the more expensive option. Thus far, it's not clear that additional fees for active management have provided a durable edge versus cheaper options that follow the same glide path and same general asset-allocation approach.

Is the Middle Path the Best Way?

The choice between underlying active and index funds doesn't have to be all or nothing. There is a middle ground where managers selectively pick active managers they believe can outperform and use index funds in asset classes where it's harder to beat the benchmarks. This "blend" or "hybrid" approach isn't new but has gained more traction in recent years as investors continue to look for ways to cut costs without forsaking all active strategies.

In 2020, three of the top 10 mutual fund series ranked by net inflows were blend strategies: JPMorgan SmartRetirement, Fidelity Freedom Blend, and Pimco RealPath Blend. They collected a combined $6 billion; up from $3 billion in 2018. Mutual fund flows only tell part of the story of blend strategies, though, as these have been far more popular in CITs for a lot longer. Exhibit 20 shows notable blend series assets and inception dates in mutual funds and CITs. To distinguish whether a series is a blend we looked at the 2030 vintage to evaluate the active/passive split when equity and bond exposure is typically more balanced. Morningstar considers series with between 70% and 30% active exposure to be a blend approach.

Exhibit 20 Blend Series Assets and Inception Dates

	Mutual Fund		CIT	
Series Name	Assets (USD Billions)	Inception Year	Assets (USD Billions)	Inception Year
Principal LifeTime Hybrid	2	2014	48	2009
Fidelity Freedom Blend	7	2018	33	2007
JPMorgan SmartRetirement Blend	14	2012	27	2010
T. Rowe Price Retirement Hybrid	—	—	15	2008
Schwab Target Date	5	2005	13	2002
T. Rowe Price Retirement Blend	—	—	5	2018
Pimco RealPath Blend	2	2014	<1	2020
Nuveen TIAA Lifecycle Blend	—	—	<1	2019

Source: Morningstar Direct. Data as of 12/31/2020.

Among these eight series, the CITs held over $141 billion in assets combined, dwarfing the combined $30 billion in mutual funds. The longer track records in CITs are certainly a plus, but CITs are also most likely to be used by larger plans.

Why Blend Is a Trend

Most actively managed stock funds have struggled to add value net of fees versus low-cost passive index funds. Most active fixed-income funds also lag their benchmarks, though they fare better than stock-pickers. Active core bond funds' success rates have easily outpaced active U.S. large-cap stock managers over the last decade, according to Morningstar's 2020 U.S. Active/Passive Barometer. U.S large-caps and core bonds form the bulk of most target-date strategies due to their inherent home bias. Exhibit 21 shows the 10-year success rates for U.S. large-cap and U.S. core bond fund categories as well as the success rates for funds in the cheapest quintile.

Exhibit 21 Active Fund's Success Rates by Category (%)

Category	All Funds	Lowest Cost
U.S. Large Blend	9.5	14.6
U.S. Large Value	11.5	25.8
U.S Large Growth	10.1	18.7
Intermediate Core Bond	22.9	41.7

Source: Morningstar Direct. Data as of 6/30/2020.

Selecting active managers in U.S. large caps, even when they have low fees, has proven difficult given their dismal long-term success rates, and the penalty for choosing a losing strategy has been greater than the benefit of finding a winner. That's because the surviving active funds in all three U.S. large-cap categories trailed their benchmark and laggards tended to lose by more than the typical margin of victory of the few peers who managed to beat their benchmarks, according to the most recent Morningstar Active/Passive Barometer.

The median return of the intermediate-core bond Morningstar Category beat its passive peers, which could indicate that active managers had more favorable opportunities and that the penalty for picking an underperforming manager wasn't has harsh. Bond-fund success rates were still below 50% when using the cheapest options, but it's still been a more fruitful asset class for selecting active managers.

That's why most firms with blend series have combined U.S. large-cap index funds with active core bond managers. The additional icing on the proverbial target-date cake is that using index funds in large doses drastically reduces costs and helps these series stay competitive on fees versus the ultralow-cost index-based series.

Two Blend TD Series Earn Gold Analyst Ratings

Thoughtfully built portfolios of high-conviction active managers and low-cost index funds in more efficient asset classes make sense; two of the four blend series that Morningstar analysts cover earn medals in Morningstar's Analyst Rating system. Exhibit 22 illustrates the Morningstar Analyst Ratings for the four blend series and the average expense ratio for its cheapest share class.

Exhibit 22 Morningstar Analyst Ratings for Blend Series

			Pillar Rating	
Series	Average Expense Ratio % (Cheapest Share Class)	Morningstar Analyst Rating (Cheapest Share Class)	People	Process
JPMorgan SmartRetirement Blend	0.19	Gold	Above Average	High
Pimco RealPath Blend	0.23	Gold	High	Above Average
Principal Lifetime Hybrid	0.38	Neutral	Average	Average
Schwab Target	0.56	Neutral	Average	Average

Source: Morningstar Direct. Data as of 12/31/2020.

Both JPMorgan SmartRetirement Blend and Pimco RealPath Blend earn Gold Morningstar Analyst Ratings, our highest level of conviction. Both series rely on their respective firm's well-regarded in-house active bond funds and mix it up on the equity side of the portfolio. JPMorgan uses active emerging-markets equity managers, an asset class where cheap active funds have had solid odds of success over the last decade. Pimco uses all Vanguard index funds for its equity exposure.

Leaders and Laggards

Exhibit 23 shows the average category ranks for each series' cheapest share class and the year-over-year change.

Exhibit 23 Trailing Average Category Ranks by Target-Date Mutual Fund—Cheapest Share Class

	1-Year			**3-Year**			**5-Year**			**10-Year**		
Name	12/31/20	12/31/19	Rank Change	12/31/20	12/31/19	Rank Change	12/31/20	12/31/19	Rank Change	12/31/20	12/31/19	Rank Change
American Funds Target Date Retirement	26	51	25	19	12	-7	17	9	-8	3	4	1
TIAA-CREF Lifecycle Index	22	18	-4	10	9	-1	11	5	-6	4	9	5
T. Rowe Price Retirement	10	17	7	8	7	-1	8	5	-3	6	5	-1
TIAA-CREF Lifecycle	27	20	-7	37	14	-23	20	7	-13	8	6	-2
John Hancock Multimanager Lifetime	8	32	24	18	35	17	11	27	16	20	24	4
Vanguard Target Retirement	43	44	1	34	28	-6	34	29	-5	21	17	-4
Voya Index Solution	40	38	-2	32	34	2	36	30	-6	24	33	9
Principal LifeTime	31	19	-12	32	22	-10	45	46	1	33	25	-8
Great-West Lifetime	61	41	-20	60	51	-9	45	36	-9	34	25	-9
MFS Lifetime	71	22	-49	43	21	-22	39	14	-25	34	23	-11
JPMorgan SmartRetirement	53	43	-10	65	41	-24	56	51	-5	35	21	-14
Fidelity Freedom	17	32	15	28	20	-8	18	13	-5	37	43	6
American Century One Choice	32	61	29	34	65	31	58	62	4	37	36	-1
BlackRock LifePath Dynamic	52	9	-43	26	4	-22	20	12	-8	37	33	-4
Voya Solution	30	57	27	55	53	-2	55	44	-11	39	43	4
Schwab Target	54	57	3	68	62	-6	76	61	-15	39	38	-1
Nationwide Destination	63	26	-37	59	61	2	49	37	-12	40	36	-4
Fidelity Advisor Freedom	27	16	-11	17	12	-5	15	11	-4	41	37	-4
Fidelity Freedom Index	41	27	-14	24	21	-3	25	22	-3	52	55	3
MassMutual RetireSmart by JPM	75	32	-43	52	21	-31	53	40	-13	53	34	-19
Goldman Sachs Target Date	66	44	-22	40	70	30	71	59	-12	64	66	2
Harbor Target Retirement	18	39	21	29	51	22	43	54	11	68	75	7
Great-West SecureFoundation Lifetime	65	80	15	75	81	6	73	61	-12	69	75	6
Guidestone Funds MyDestination	74	48	-26	62	29	-33	49	54	5	72	52	-20
Putnam RetirementReady	86	98	12	96	97	1	96	94	-2	76	71	-5
Franklin LifeSmart	57	81	24	61	68	7	86	89	3	79	70	-9
USAA Target Retirement	90	91	1	94	88	-6	87	84	-3	86	79	-7
Wells Fargo Target	91	78	-13	83	77	-6	88	74	-14	88	71	-17
Invesco Balanced-Risk Retirement	89	97	8	95	97	2	92	94	2	92	90	-2
John Hancock Multi-Index Preservation	56	86	30	59	80	21	63	66	3	64	—	—
State Street Target Retirement	10	27	17	8	23	16	9	30	21	—	—	—
John Hancock Multi-Index Lifetime	49	25	-24	38	36	-2	25	20	-5	—	—	—
Pimco RealPath Blend	52	37	-15	42	36	-6	29	40	11	—	—	—
T. Rowe Price Target	25	54	29	23	32	9	33	26	-7	—	—	—
BlackRock LifePath Index	55	16	-39	30	18	-12	34	15	-19	—	—	—
Voya Target Retirement	25	50	25	38	51	13	45	47	2	—	—	—
Principal Lifetime Hybrid	37	33	-4	52	58	7	48	37	-11	—	—	—
JPMorgan SmartRetirement Blend	74	55	-19	69	46	-23	57	34	-23	—	—	—
Dimensional Target Date	38	58	20	50	64	15	46	—	—	—	—	—
Wells Fargo Dynamic Target	67	59	-8	37	9	-28	34	—	—	—	—	—

Legend
- Positive
- Negative

Source: Morningstar Direct. Data as of 12/31/2020.

Exhibit 23 Trailing Average Category Ranks by Target-Date Mutual Fund—Cheapest Share Class (Continued)

Name	1-Year 12/31/20	1-Year 12/31/19	1-Year Rank Change	3-Year 12/31/20	3-Year 12/31/19	3-Year Rank Change	5-Year 12/31/20	5-Year 12/31/19	5-Year Rank Change	10-Year 12/31/20	10-Year 12/31/19	10-Year Rank Change
Transamerica ClearTrack	48	30	-18	50	57	7	63	—	—	—	—	—
Prudential Day One Target Date	88	65	-23	81	61	-20	—	—	—	—	—	—
Schwab Target Index	62	42	-20	40	36	-4	—	—	—	—	—	—
1290 Retirement	98	68	-30	89	—	—	—	—	—	—	—	—
Columbia Adaptive Retirement	70	37	-33	37	—	—	—	—	—	—	—	—
Invesco Peak Retirement	88	77	-11	88	—	—	—	—	—	—	—	—
Natixis Sustainable Future	21	34	13	7	—	—	—	—	—	—	—	—

Legend: Positive, Negative

Source: Morningstar Direct. Data as of 12/31/2020.

American Funds has been the top-performing series over the last decade, surpassing TIAA-CREF, which ranks second for its index-based series and fourth for its active-based series, and T. Rowe Price Retirement for the top honors.

Strong stock selection, resilient bond funds, and positive results in allocation funds offering exposure to bottoms-up tactical shifts have helped American Funds. The series' persistent tilt to U.S. mega-cap stocks as they have soared past smaller-cap equities over the past decade also was fortuitous. It's 2050 vintage's average market cap for the trailing decade was about $10 billion more than that of its typical peer's. By the end of 2020, though, its $90 billion average market cap was 60% higher than the category average of $57 billion. The series' underlying funds also have large asset bases, which could make it harder to pivot to smaller companies if those come back into vogue. For example, at $69 billion, American Funds Small Cap World is the eighth-largest stock fund in the series and bigger than all but one of T. Rowe Price Retirement's seven large-cap equity funds.

MFS Lifetime saw the biggest tumble in its peer group ranking. Its quantitative blended research funds had a tough time with 2020's extreme volatility. MFS Blended Research Growth underperformed the Russell 1000 Growth Index by 7.5 percentage points for the year, and the MFS Blended Research Core lagged the Russell 1000 by 5.4 percentage points. With returns among target-date funds growing narrower, off years like this could tarnish an otherwise solid long-term track record.

ESG Options Under Pressure

The biggest change in 2020 was the Department of Labor's October ruling that prevented intentional ESG strategies from serving as the qualified default investment alternative, or QDIA, in defined-contribution plans. Plans typically use target-date funds to fill this option. The ruling has slowed new product development, despite many signs that investor demand for sustainable options is rising, and it has also affected existing target-date series. American Century One Choice, for example, removed the tobacco screen from its underlying funds to avoid a potential conflict with the rule that could force plan sponsors to choose a new QDIA option.

As of the end of 2020, only two intentional ESG options existed: Natixis Sustainable Futures, which launched in February 2017, and BlackRock LifePath ESG Index, which launched in August 2020. Despite hitting its three-year track record, a typical minimum requirement for inclusion on a defined-contribution plan, the Natixis series held less than $60 million in assets at the end of 2020, possibly as a result of plan sponsors shying away from target dates that can't serve as a QDIA.

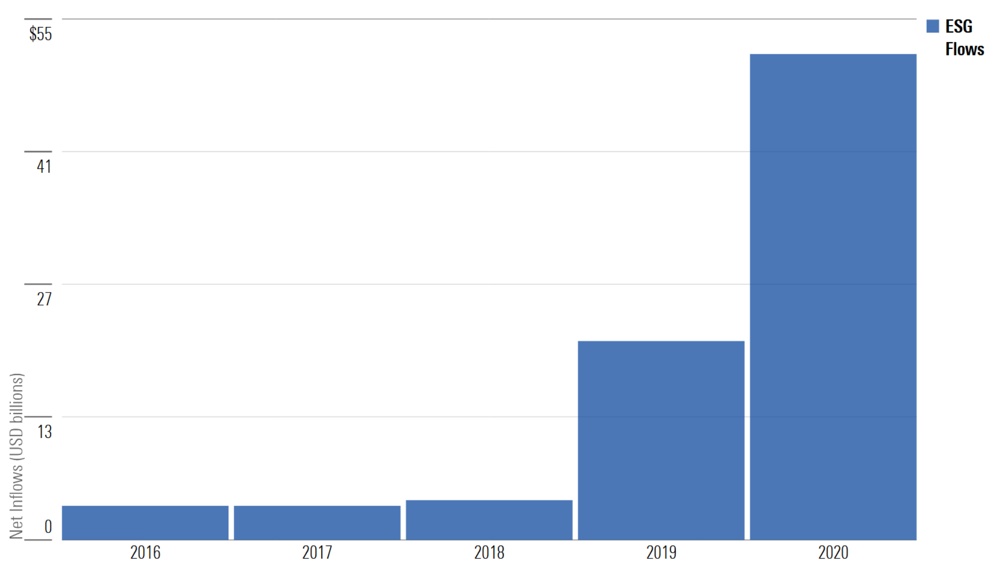
Even without government intervention, these options face an additional challenge when it comes to building well-diversified portfolios. Specifically, there is a scarcity of intentional ESG fixed-income options. The ESG criteria used to evaluate important fixed-income sectors, such as U.S. and other government bonds and asset-backed securities, isn't as robust or standardized as the criteria used to evaluate corporate stocks and bonds.

Although none of the largest target-date series intentionally target ESG criteria, some target-date providers have made progress toward integrating sustainability at the firm level, as indicated by the Morningstar ESG Commitment Level, or ECL. So, while there's few intentional ESG options, the ECL can help lead investors toward firms more aligned with their values.

Demand for ESG Options Rising, but ESG-Bond Funds Aren't Plentiful

Investors poured an estimated $51 billion into intentional ESG strategies in 2020, up from $21 billion in 2019, continuing a recent trend. Exhibit 24 shows the annual net flows into sustainable strategies since 2016.

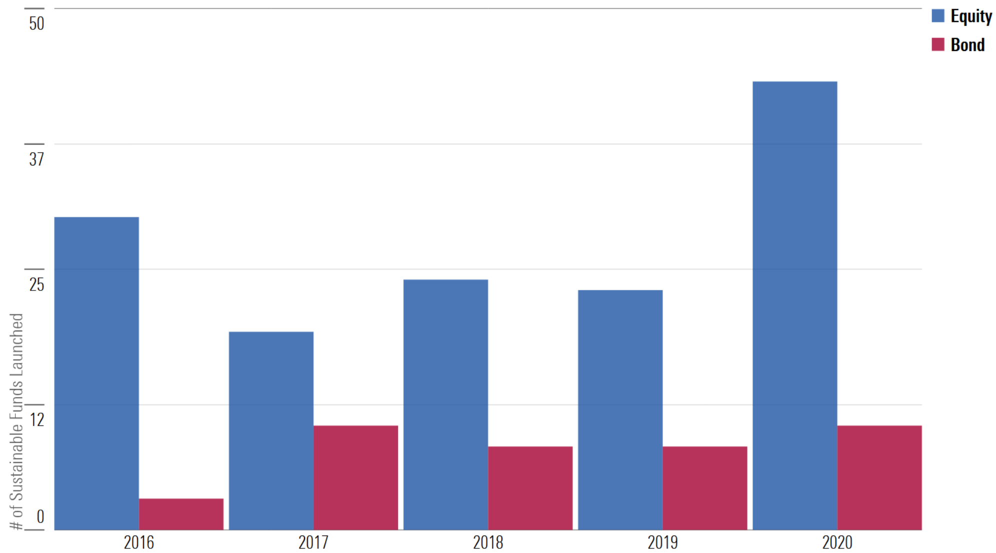
Exhibit 24 Sustainable Fund Flows in the U.S.



Source: Morningstar Direct. Data as of 12/31/2020.

Typically trends like this would motivate asset managers to launch a rash of products. Indeed, there has been a plethora of new stock funds launched, but fewer bond funds, as shown in Exhibit 25.

Exhibit 25 Sustainable Fund Launches in the U.S.



Source: Morningstar Direct. Data as of 12/31/2020.

In total, 129 sustainable equity funds have launched since 2016, but only 37 bond funds have launched. This highlights the challenges of building a diversified target-date strategy using existing fund options. When the Neutral-rated Natixis Sustainable Futures series first launched, for example, management allocated most of the bond portfolio to Mirova's Global Green Bond MGGNX. While this fund employs rigorous ESG criteria, its size in the target-date portfolio left some investors with concentrated positions in specific securities. For example, investors in the 2015 fund, which targets a 28% allocation to Mirova Global Green Bond had over 2% of their retirement portfolio in a single French government bond. The lack of diversification drove an original Morningstar Analyst Rating of Negative. Management has since broadened the bond portfolio by adding a core bond strategy run by Loomis Sayles, clearing the way for an upgrade to Neutral. But this fund is less compelling from an ESG perspective. Mirova's Global Green Bond fund targets specific environmental impact, but Loomis Sayles simply considers ESG criteria alongside a host of other factors. Among other things, this "soft-touch" approach to ESG integration drove the series' Basic Morningstar ESG Commitment Level.

Morningstar doesn't currently cover BlackRock's LifePath ESG Index series, but it resembles its Gold-rated sibling BlackRock LifePath Index. The overall allocation is similar, but the ESG series uses index funds that tilt toward securities with favorable ESG characteristics. It invests most of its bond portfolio in Silver-rated iShares ESG U.S. Aggregate Bond EAGG, which has similar exposures to the Bloomberg Barclays U.S. Aggregate Index but tilts toward corporate and government-related bonds with better ESG scores. It only earns a Basic ESG Commitment Level, however, in part because the fund relies on ESG data from MSCI, which currently only applies to about 30% of the portfolio. While the fund's corporate and government-related holdings tilt toward better ESG performers, the other major holdings, like asset-backed securities, are not evaluated under ESG criteria.

The Morningstar ESG Commitment Level

A short list of intentionally sustainable target-date strategies shouldn't deter value-oriented investors from target-date strategies, though. Some target-date providers have made progress toward integrating sustainability broadly across the firm, a positive indicator that these firms will prioritize activities such as ESG research, developing a philosophy of sustainable investing, active shareholder engagement, and transparent reporting on ESG metrics.

In November 2020, Morningstar published its first global assessment of 100-plus strategies and 40 asset managers on their ESG Commitment Level. There are more assessments to come in 2021, but this first batch can already help investors incorporate ESG considerations when picking their target-date strategy's provider. The aforementioned Natixis Sustainable Futures series was the only target-date strategy included in this first cohort as it mostly focused on ESG-intentional strategies, but investors can look at the ESG Commitment Level for Asset Managers that was published for a number of U.S. firms, including some of the biggest players in the target-date space.

The Morningstar ESG Commitment Level is a qualitative evaluation of asset managers' commitment to incorporating ESG factors into their investment organization and processes. The scale has four levels: Leader, Advanced, Basic, and Low. Among the 10 largest target-date providers, six were assessed on their ESG Commitment Level during this first assessment.

Exhibit 26 Morningstar ESG Commitment Level

Firm Name	ESG Commitment Level for Asset Managers
Nuveen, a TIAA Company	Advanced
BlackRock	Basic
Capital Group (American Funds)	Basic
American Century	Low
Fidelity	Low
Vanguard	Low

Source: Morningstar. Data as of 12/31/2020.

Of the six, none achieved a Leader ESG Commitment Level, which recognizes asset managers that have placed ESG at the core of their identity, a high hurdle for asset managers who offer both intentional and non-intentional ESG strategies. Nuveen earned a Morningstar ESG Commitment Level of Advanced, the highest rating of the six target-date providers we evaluated. Firms that earn an Advanced rating are among the industry's better ESG proponents and are deliberate in integrating ESG considerations into investment processes. By way of parent company TIAA, Nuveen has a long history of purposeful and mission-driven investing, together with a solid team of in-house expertise. The firm plans to systematically integrate ESG factors to improve investment processes in areas like risk management.

BlackRock and Capital Group were awarded an ESG Commitment Level of Basic. The Basic ESG Commitment Level group is the largest and most diverse group of asset managers in terms of experience of ESG incorporation. Some are still in the early stages of their ESG incorporation journey, while others

are further along, although not far enough to be classified as Advanced. For example, BlackRock, which has offered ESG strategies for years, only made it a firmwide commitment in 2020. It has big ESG ambitions, but it's too soon to tell if they'll be successful.

American Century, Fidelity, and Vanguard received ESG Commitment Levels of Low. Firms at this level are typically just getting started on incorporating ESG considerations into their investment processes, using ESG criteria in a limited or more-variable way, or simply not incorporating ESG at all.

The Future May Hold Greener Pastures

The prohibition on intentional strategies as QDIAs may be short-lived. In January, President Joe Biden asked the DOL to review this rule as part of a series of executive actions, which suggests there will be changes before the April 2022 compliance date. In March, the DOL further stated it would not enforce the rule while it was being reviewed. Should the new administration change the rule to allow plan sponsors to offer ESG investments, there could be renewed interest in ESG target-date funds as a default investment, which could spur both product development and inflows in intentional ESG options.

Private Equity Coming to a Target-Date Fund Near You?

The other significant change the DOL made in 2020 was to allow private equity options on defined-contribution plans. As target-date fund managers continue to look for new ways to expand their investment menus in order to differentiate themselves and improve results for shareholders, the ability to use private equity is something we expect most firms to at least consider.

Many target-date funds may be reluctant to make meaningful private equity investments because of some major roadblocks. Namely, private equity strategies are illiquid, lack transparency, charge high fees (average management fee charged was 1.75% in addition to a 20% performance fee on all profits above a hurdle rate, per PitchBook), and are difficult to value since the underlying investments are not traded on an open market.

There are other considerations as well, including administrative issues like performance measurement, managing capital calls and distributions, and vintage year diversification (the year a fund makes its first capital call). The total amount of capital committed by an investor is not immediately utilized, rather it is called down in increments as each new investment is made by the private equity managers. Along those same lines, distributions, or cash flows from closed deals are returned to investors in increments instead of a lump sum at the end of an investment period. Target-date fund managers will need to aptly have cash available for calls and efficiently put returned capital back to work. Proponents argue that long-term objectives of retirement allow investors to benefit most from illiquid private equity investments, therefore enhanced return generation and diversification outweigh the challenges, but it remains to be seen if target-date funds will make meaningful investments in private equity.

Private Real Estate Already Plays a Role in Some Target-Date Funds

Direct real estate, on the other hand, tends to be a bit more common in target funds. Some target-date funds use direct real estate investments to improve diversification, generate yields, and enhance risk-

adjusted returns. The exposure can also provide a natural inflation hedge since income and value generated from property value is closely linked to rising prices. However, direct real estate is subject to some of the same challenges as private equity, like pricing and liquidity issues; but, notably, fees tend to be much lower for these strategies compared with private equity.

The performance advantage is apparent when comparing direct real estate investments with public REITs using PitchBook's private real estate benchmark data. The private avenue has provided a much more stable ride, has lower correlation to equities, and has outperformed the public counterpart from January 2010 through June 2020. Investors should keep in mind that direct real estate returns are based on less-frequent appraisals and transactions of the underlying holdings, therefore making the return profile less volatile.

Exhibit 27 Private and Public Real Estate Correlations to Major Asset Classes

Firm Name	S&P 500 TR	Bloomberg Barclays Aggregate Bond Index	Private Real Estate
Bloomberg Barclays Agg	-0.26	—	—
Private Real Estate	0.09	-0.17	—
FTSE NAREIT All REITS Index	0.77	0.09	0.04

Source: Morningstar Direct and Pitchbook. Data as of 12/31/2020.

TIAA and JPMorgan are two major players that use direct real estate, albeit in different ways. TIAA provides investors of its target-date mutual funds with real estate exposure, while JPMorgan only accesses it through its CITs. This means that TIAA is subject to the 15% illiquid asset limits in its mutual funds and has an impact on total sizing of the real estate component, while JPMorgan is not subject to the same mutual fund liquidity rules. This results in a 5% allocation limit for TIAA, but that allocation persists throughout the entire glide path. Additionally, TIAA specifically designed and utilizes its direct real estate fund solely for its target-date series, whereas JPMorgan accesses direct real estate through a commingled fund available to other investors.

A Changing of the Guard

Three top target-date managers either retired or left their firms in 2020. Here's how that impacted our analysis of those series' People Pillar ratings.

JPMorgan SmartRetirement and SmartRetirement Blend

Manager Change: Anne Lester retires

People Pillar: Downgraded to Above Average, from High

In April 2020, Anne Lester stepped down as a portfolio manager for the JPMorgan SmartRetirement and SmartRetirement Blend series in anticipation of a July 31, 2020, retirement to focus on national

retirement policy. Lester had overseen this series as lead manager since its inception in 2006, and though she relinquished day-to-day responsibilities on the series in early 2019, Lester continued to influence the strategic direction of J. P. Morgan's target-date series. Lester pioneered innovative retirement plan participant research that meaningfully enhanced the series and raised the bar for target-date managers in general. Naturally, her departure was a loss for this series.

Encouragingly, Lester's longtime comanager and 20-year J. P. Morgan veteran Dan Oldroyd stepped up as this series' leader. Oldroyd's long history with Lester and the series inspires confidence despite the abruptness of her announcement. However, Oldroyd's research and portfolio-implementation responsibilities had already increased meaningfully in the wake of a previous portfolio manager shakeup in 2019. Now Oldroyd has taken on Lester's participant research duties, too, and must marshal the vast multi-asset resources that support the series without her. With Oldroyd alone at the helm, we downgraded the SmartRetirement and SmartRetirement Blend series' People Pillar to Above Average from High.

BlackRock LifePath Index

Manager Change: Matt O'Hara departs

People Pillar: High, unchanged

In December 2020, BlackRock announced Matt O'Hara, co-head of its LifePath suite of target dates, had left the firm. O'Hara was a key figure in keeping BlackRock's target-date funds ahead of the curve. In 2014, he led the research that drove a revamping of the LifePath glide path. The result was more equity across most of the glide path and was based on research into investor preferences and behavior, as well as a review of its long-term capital market assumptions. That change has been beneficial to shareholders since then, as equities have generally outperformed other asset classes. More recently, he was involved in 2016 overhaul of the firm's target-date lineup that resulted in a move away from a traditional active-based series to BlackRock LifePath Dynamic, which harnesses the firm's best active and passive funds and has a skilled tactical manager at the helm in Phil Green.

While O'Hara's departure is a loss, the remaining team has lost none of its intensive focus on research to continue to improve the series. Chris Chung, head of asset allocation on the team since 2018 and a team member since 2008, replaced O'Hara as lead manager on BlackRock LifePath Index, and the firm further bolstered the team's resources by naming Partha Mamidipudi head of human capital research. He led research for the team until 2016 and rejoined from his role building customized portfolio-optimization tools for advisors on Aladdin. We remain confident in the team's capabilities.

T. Rowe Price Retirement

Manager Change: Jerome Clark retires

People Pillar: High, unchanged

Jerome Clark is a pioneer of target-date investing. He founded T. Rowe Price's target-date franchise in 2002 when there were only a handful of target-date series in the industry. It stood out from the crowd from the start with a more aggressive equity glide path than most peers, which has influenced its long-term success. He led projects to continually hone its approach, adjusting the series' equity and fixed-income suballocations over time. Under Clark's leadership, T. Rowe Price increased its equity allocations across target-date series in February 2020. Although the timing initially seemed less than ideal, the team did not waver and ended the year with top-quartile performances for each vintage.

Clark stepped down as a portfolio manager on the target-date strategies at the start of 2021. T. Rowe telegraphed the move well in advance, and part of Clark's legacy is leaving the target-date series in strong hands. Clark's successor is Wyatt Lee, a comanager on the series since 2015 and 20-year T. Rowe Price veteran. Complementing Lee's depth of experience, one of the industry's best-resourced multi-asset team supports this strategy, driving an extensive research agenda that consistently adds value to series investors. In addition to these pieces, the team allocates to an exemplary lineup of underlying managers. More than 75% of series assets reside in Morningstar Medalist funds, including allocations to Gold-rated managers like Brian Berghuis of T. Rowe Price Mid Cap Growth and David Wallack on T. Rowe Price Mid Cap Value. Our confidence in Lee and the foundation that Clark built are strong enough to maintain a High People rating.

Are Target-Date Manager Incentives Aligned With Shareholders?

Making sure a manager's incentives are aligned with shareholders' is an important part of evaluating any type of investment strategy, including target-date strategies. There are two common ways to evaluate that alignment: How are the managers compensated and do the managers invest alongside shareholders? In this section we'll look at both metrics for the 10-largest target-date providers. Target-date strategies are designed to carry investors through every stage of their retirement savings journey, from accumulation at the start of a career to providing a replacement income stream in retirement. Investors who keep this long-term horizon in mind are more likely to maximize the benefits offered by target-date strategies.

Likewise, the investment firms offering target-date strategies should incentivize portfolio managers to focus on long-term performance. Most firms tie manager bonuses directly to fund performance versus an appropriate benchmark or peer group. However, firms evaluate results over different measurement periods; some emphasize shorter time frames, while others focus on the long haul.

Exhibit 28 shows the 10-largest target-date providers and the time horizons used to evaluate performance. Most of this information can be found in the firm's Statement of Additional Information. State Street and Schwab lack this level of detail in their SAIs and declined to share this information with us.

Exhibit 28 Manager Compensation

	Time Periods Measured					
Fund Company	1-Year	3-Year	5-Year	8-Year	10-Year	Highest TDF People Pillar Ratng
Vanguard						Above Average
Fidelity						High
T. Rowe Price						High
BlackRock						High
American Funds						High
JPMorgan						Above Average
SSgA						Above Average
Nuveen						Average
Principal Funds						Average
Schwab						Average

Source: Morningstar Direct, SEC filings, surveyed results. Data as of 12/31/2020.

T. Rowe Price and J.P. Morgan stand out for their inclusion of 10-year results. This exceptional focus on the long haul is in shareholders' best interests. We consider it an industry best practice; few asset managers extend performance evaluations that far.

American Funds' structure also stands out in its long-term orientation, which we believe has been a key contributor to the firm's investment success. The firm pays bonuses based on one-, three-, five-, and eight-year returns relative to benchmarks and competitors. The firm uses a progressive weighting scheme, meaning it places increasing weight on each succeeding measurement period, which also represents an industry best practice.

Short-term results still play a key role in determining manager bonuses. Among these 10 firms, only Fidelity excludes one-year results once the manager has a long enough track record to be evaluated on three-year returns. The approach of removing one-year results is commendable.

Vanguard and State Street are special cases. Both series' named portfolio managers are primarily focused on implementing the strategy, handling daily cash flows, and rebalancing, similar to index fund managers. Factors like the shape of the glide path and asset allocation, which are going to have the biggest impact on long-term results, are decided by others. These are the only series among the top 10 that don't have a key decision-maker listed as a manager. Ideally, firms would name key decision-makers as portfolio managers so it's transparent to investors who is responsible for the performance of the series.

Vanguard's Strategic Asset Allocation Committee handles oversight of its series. The committee includes a dozen senior firm leaders such as Greg Davis, chief investment officer, Kaitlyn Caughlin, head of the portfolio review group, and Joel Dickson, global head of advice methodology.

State Street takes a similar committee approach. Committee co-chairs Dan Farley and Dave Ireland, from the investments arm and the defined-contribution team, respectively, have ultimate say on the glide path and asset allocation. They are supported by five other senior members.

Managers Who Eat Their Own Cooking

Investing alongside shareholders is another sign managers' interests are aligned with shareholders. The good news is the number of target-date series with at least one manager investing more than $1 million alongside shareholders is growing,

Exhibit 29 Manager Compensation

Strategy Name	>$1 Million Invested
American Century One Choice	Yes
American Funds	Yes
Dimensional Target Date Retirement Income	Yes
Fidelity Freedom	Yes
John Hancock Multimanager Lifetime	Yes
JPMorgan SmartRetirement	Yes
MFS Lifetime	Yes
Natixis Sustainable Future	Yes
TIAA-CREF Lifecycle	Yes
TIAA-CREF Lifecycle Index	Yes
T. Rowe Price Retirement	Yes

Source: Morningstar Direct, SEC filings, surveyed results. Data as of 12/31/2020.

As of the end of 2020, 11 series had significant manager investment alongside shareholders. That's a slight improvement from 2018, when only seven series featured a manager with a significant investment alongside shareholders.

Morningstar and others have found that manager investment has been one of the few data points shown to have helped in forecasting funds that are more likely to outpace peers and survive over long time periods. So, when picking a target-date strategy, investors should check if the manager has skin in the game as part of their due-diligence process. M

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